The Zamindar has worked well so far, and as Kandi coppice raised in this way is always very satisfactory I have every reason to believe the plan will be highly successful.

15. The boundaries of the new Reserves have been laid down by a cleared path 20 feet wide and earth cairns with a post in the middle at each bend and at every five chains along the straight. The brushwood resulting from the clearing of the boundary-path is thrown up as a fence on the inner edge of the boundary-path and as far as practicable simultaneously with the laying down of the boundaries the forests have been cut up into compartments.

One hundred and eighty-four miles of compartment lines have been cut and the boundaries of the following Reserves laid down:—

Raheki.	Phaka.
Reti.	Noabad.
Rangoo.	Bhan.
Narli.	Gidárji.
Dangar.	Messa.
Phati Bilawal.	Khathar.

CHAPTER III.—PROTECTION AND IMPROVEMENT.

SECTION I.—ESTABLISHMENTS.

16. Mr. Tuljaram was appointed Sub-Assistant Conservator of Forests on the 24th August 1886.

No other change has taken place in the permanent protection or office establishment of the Sind Circle, and I have nothing particular to note under this head.

SECTION II.—GENERAL PROTECTION AND BREACHES OF FOREST LAW.

17. The general protection of the forests as evidenced by their condition and the reports of the Divisional Forest Officers is very good, and the conduct of the Protective Staff on the whole has been satisfactory.

18. The following table shows the number of cases tried before Magistrates, with results:—

Name of Division.	Number of cases tried before Magistrates.		Number of convictions.	
	1885-86.	1886-87.	1885-86.	1886-87.
Sukkur	23	20	7	12
Jacobabad	41	18	12	13
Naushahro	14	4	6	9
Hyderabad	16	15	11	12
Jerruck	4	1	1	1
Total...	98	58	37	47

The number of acquittals as compared to convictions is still very high, but the fact can only be attributed to the difficulty of getting convictions in Forest offences.

19. No prosecution is permitted without the sanction of the Divisional Forest Officers and the enormous number of offences compounded as compared to prosecutions shows that Divisional Forest Officers are not inclined to send up petty cases for trial.

I may here quote a case illustrating the difficulty of getting convictions in cases of Forest offences.

Udho and Lalu who had been formerly convicted of theft of timber from Government forests, and who have the reputation of preying on the Upper Sind Forests, were found in possession of timber which had evidently been stolen from a Government Forest, and which they admitted had come from a Government forest, but that they had obtained it from one Nural who had bought it from the Forest Department. Nural repudiated this statement. Most of the logs had no marks, others had fictitious numbers stamped on them that the register showed had not been stamped on the description of logs on which they were found, and which were in the possession of the accused. The case was tried before the Town Magistrate, Sukkur, and the accused were convicted of theft and awarded twelve months' imprisonment and a fine of Rs. 400 and 450 each. But on appeal to the Sessions Judge of Shikarpur they were acquitted of the chief offence and fined Rs. 50 for importing timber into Sukkur without a duly qualified pass.

20. A good many of the cases in which conviction has not been obtained are of assaulting Forest guards. These would be always difficult cases to prove as villagers are not likely to give evidence in favour of a Forest guard and against their own tribesmen, and no other kind of witness is likely to be available.

21. The cases compounded are given below:—

Division.	Illicit grazing.		Theft.		Other offences.		Compensation.	
	1885-86.	1886-87.	1885-86.	1886-87.	1885-86.	1886-87.	1885-86.	1886-87.
Sukkur	299	293	49	67	7	15	2,002	3,265
Jacobabad	...	12	...	3	...	1	...	87
Naushahro	...	....	...	16	...	...	...	35
Hyderabad	357	357	...	5	...	2	304	281
Jerruck	319	282	28	6	...	3	450	338
Total.....	975	944	77	97	7	21	2,756	4,006

On the whole there is not much crime to complain of, and the relations of Forest subordinates with the people are satisfactory, except in respect of the Cattle-breeders in the Shahbander District where illicit grazing in the Forest is very common and leads to collisions between the maldars (cattle-breeders) and the Forest guards.

Section 3. Fires.

22. In Upper Sind the forest fires were very extensive and destructive. It was feared that this *would* be the case. There was much cattle-disease in the district and the cattle-breeders believed that it would not cease till the old reeds and grass had been burnt. There was much truth in this as the dead cattle were lying rotting in the high reeds and grass and infecting the sound cattle grazing in them. The people to save their cattle set fire to the grass wherever they could do so without fear of detection, and an area of nearly eleven thousand acres was burnt. About half was chiefly reeds and grass of not much account but the rest was good jungle, including a great number of compartments under reproduction that were nearly ready to work again. These compartments have been worked once already and their destruction causes a loss of many years' protection. Only one case is reported of a man being caught setting fire to a forest and being convicted of the offence.

In Central and Lower Sind the forest fires were unimportant and very little damage was done by them.

23. The protection of the Upper Sind Forest from fire especially in a season like the one under report is simply hopeless. The only practical plan of saving good jungle from fire in this district is what I have before advocated but which I regret does not commend itself to the Government of India, and this is to divide the Forests into grazing and timber blocks. The former to consist of the tracts of reed and coarse grass with a few scattered bushes struggling for existence against the recurring fires. The area set apart for grazing should be freely burnt so as to provide fresh young grass. This would increase the revenue from grazing fees, benefit the people and tend to save the better part of the forests from fire.

As I have said before fires in such jungles are likely to do more good than harm.

If the reeds are protected they are sure to destroy when they do catch fire any tree growth that may come up with them and their being burnt is merely a question of time.

But if the reeds are burnt and the fresh shoots kept down by cattle, the next inundation may drown the reed roots and give the Tamarisk and Kandi a chance of over-topping the next crop of reeds and grass that may come up.

The Shahpur forest is a case in point. All the lower part of this forest I can remember as a sea of reeds and grass the scene of extenseve fires. Some years ago the entire area of low-lying land was burnt very late in the season. The next inundation submerged the roots of the reeds before they had time to shoot again and killed them, the next year the Tamarisk coppice that had been kept down by the fires came up with such strength that it overtopped the grass, and now that part of the forest is a dense Tamarisk jungle safe from fire, and will, in a year or two, yield immense quantities of locomotive fuel. It was worked a little for thin wood last year.

By widening the compartment lines of the squares to be burnt and choosing a still day for firing the reeds, the risk of the fire extending beyond the limits it was intended to reach would be very slight.

24. The following comparative statement gives the number of fires and the area burnt during the previous and the year under report :—

Division.	Number of Fires.		Area burnt.	
	1885-86.	1886-87.	1885-86.	1886-87.
Sukkur	53	79	8,046	11,029
Jacobabad	6	7	88	90
Naushahro	13	9	590	882
Hyderabad	7	12	245	579
Jerruck	2	12	33	153
Total	81	119	9,002	12,733

Section 4. Grazing.

25. During the year under report the scale of grazing fees was revised and the forests of the circle were classed as 1st, 2nd and 3rd according to the quality of grazing they can afford, and the following scales were made applicable to each class :—

1st class rate of grazing fees.

Camels	4	annas	a month.
Buffaloes...	3	„	„
Horses, Cows and Bullocks	1½	„	„
Donkey	1	„	„
Goats and Sheep	3	pies	„

2nd Class.

Camels	4	annas	a month.
Buffaloes...	1½	„	„
Horses, Cows and Bullocks	9	pies	„
Donkeys...	6	„	„
Goats	3	„	„
Sheep	2	„	„

3rd Class.

Camels	4	annas	a month.
Buffaloes	1	„	„
Horses, Cows, Bullocks and Donkeys	6	pies	„
Goats	3	„	„
Sheep	1	„	„

The first class includes all the old river-side forests in which the old rates of grazing fees, *i. e.*, 1st class have been retained. The other two classes are for forests demarcated since 1879, in which the grazing is poorer than in the river-side forests.

It will be noticed that the rate of fees for goats and camels is the same in all three classes. The reason for this is obvious, being browsing animals, one kind of forest affords as good feed to them as another and their presence is equally objectionable in all.

The inundation had been a high one and all the forests that are usually flooded were well watered and afforded good grazing and the Babul pod crop, which is collected for fodder, was a fairly good one.

Section 5. Natural reproduction.

26. In Upper Sind 48 compartments, including a good many that had been burnt, with an area of 6,840 acres, after being cleared of all available material for locomotive fuel were closed for natural reproduction during this year. But camels and goats only are excluded. The horned cattle do not eat Tamarisk, and Kandi coppice is so well protected by its own thorns that it is safe from them; any damage they may do is more than compensated for by their keeping down the grass which is such a source of danger in young forest. In Central and Lower Sind an area of 4,966 acres was closed for reproduction. In these parts of the Province where much Babul grows the compartments under reproduction are closed to horned cattle as well as all other kinds of beasts.

27. An area of 2,921 acres in which the new growth was sufficiently strong was opened to grazing during the year, leaving a total area of 20,440 acres closed.

The results of closing for reproduction are very satisfactory where the young growth has not been burnt or killed by frost. The damage by fire is confined to Upper Sind and has been very great. The damage done by frost is comparatively trifling, the roots of the majority of the Babul seedlings being still alive though the tops had been killed. Frost seldom destroys the whole crop of seedlings, the greater part of them come up again and after that as a rule they are safe except from very severe frost.

28. The Kadrapur block No. 2, Sukkur Division, which was burnt last year was cleared of all saleable material and closed again. This block was very nearly ready to work when it was burnt and it is interesting to note the results attained by mere closing and without any artificial irrigation. The block is 450 acres in extent. It only gets water in seasons of high flood when surplus water escapes into it from neighbouring Zamindari canals. The growth on it is Kandi and Bhan. It was closed in 1878. I saw it then, it was as nearly as possible an open Maidan; it had been very recently burnt and all the tree growth destroyed, the grass and coppice shoots of Kandi and Bhan were coming up again.

The block was fenced in and after three or four years opened to grazing by horned cattle only. But the grass had become so high that the cattle made very little impression on it. Last year it was burnt and three-fourths of the tree growth on it killed. The yield from the trees that had been burnt and which are the growth of only seven years is as under—

Bhan rafters	8,221
Bhan posts	6,159
Locomotive fuel	34,525 C. ft.
Ordinary fuel	7,276 Mds.

Section 6. Artificial reproduction.

29. Owing to want of funds nothing of much importance was done under this head.

In the Sukkur Division 7½ acres were added to the Tali plantation but the frost killed some of the seedlings, 4,000 survived and were from one to three feet in height at the end of the year. A plot of 7½ acres was ploughed and sown with Babul. The seedlings suffered from frost but have shot again and are reported to be doing well. Another plot of 20 acres, the site of former cereal cultivation, was also sown with Babul and is reported to be doing well.

Tali seedlings 225 in number were planted along a bund which has been lately put up by this Department to retain flood-water for the irrigation of the Kadrapur forest.

The old Tali plantation, some 90 acres in extent which are the result of small operations that were carried out between 1876 and 1882 during the time Mr. Dasai was District Forest Officer in Sukkur were thinned out. All the trees to be felled were marked by the District Forest Officer and only the crooked and useless ones, and such as were growing too thickly together, were taken out.

The result of the thinnings gave 23,125 cubic feet locomotive fuel, 50 maunds ordinary fuel, and 77 cubic feet of timber in small scantlings. The results are somewhat remarkable if the age of the plantations is kept in view, and the fact that merely the refuse was taken out.

I saw the thinning in progress and they did not appear to make an appeciable difference in the appearance of the plantation.

I think this is the first instance on record in the history of the Forest Department in the Bombay Presidency of forest material artificially grown by the Department being disposed of in any quantity.

30. In other Divisions the want of funds has prevented Planting operations being taken in hand; the existing plantations were kept up.

Section 7. Experiments.

31. *Prosopis Glandulosa* which was grown as an experiment over an area of 3½ acres in 1884 has established itself well and required no care after the first season, and has had no water since except rain water. It appears to be suitable for growth under natural conditions in Sind, but all the broadcast sowings of its seed that have been made have been failures. It is only of value as a fodder plant for its pods.

32. The experiment with Asri cuttings was continued by Mr. Dasai but the results are not satisfactory, only 112 having succeeded out of 1,500 planted, but he says this is due to want of care on the part of the Forester and he hopes to show better results under personal supervision.

Section 8. Communication and Buildings.

33. There were no funds available for anything but urgent repairs to existing buildings.